

# **F C C - TEST REPORT**

REPORT NO.: 43329

## **FCC – Test Report**

Date: 2005-12-14

**No. 43329**

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**FCC listed testlab  
acc. to Section 2.948 of the FCC - Rules  
in compliance with the requirements of  
ANSI C63.4 - 2003**

**Product** : AM/FM CD Clock Radio with  
Weather Band

**Product Class** : Communication Receiver  
(Super Hetrodyne)

**Brand Name** : -

**Model** : CRD840WN

**Importer** : LASCO INDUSTRIES LIMITED

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## LABORATORY - REPORT

**APPLICANT:** LASCO INDUSTRIES LIMITED  
**ADDRESS:** Unit 2 & 4, 9/F, Century Centre  
44-46 Hung To Road, Kwun Tong  
Kowloon, HONG KONG

**DATE OF SAMPLE RECEIVED:** 2005-09-06

**DATE OF TESTING:** 2005-09-07 to 2005-09-08

### DESCRIPTION OF SAMPLE:

Product: AM/FM CD Clock Radio with Weather Band  
Product class: Communication Receiver (Super Hetrodyne)  
Model no.: CRD840WN  
Rating: AC 120V 60Hz and DC 9V ('6F22' Size Battery x 1) for Backup

**INVESTIGATIONS REQUESTED:** Measurements to the relevant clauses of F.C.C. Rules and Regulations  
Part 15 Subpart B – 'Unintentional Radiators'

**RESULTS:** See the attached test sheets

**CONCLUSIONS:** From the measurement data obtained, the tested sample was considered to have **COMPLIED** with the requirements for the relevant clauses of Federal Communications Commission Rules as specified above.

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Authorized Signature

**Remark:** 1. Purpose of those tests in this report is to provide the applicant with the necessary test data of their device for the submission to FCC with application for Equipment Authorization under the FCC Equipment Authorization Program. The tests themselves are not Approval Tests.  
2. The conducted emissions test (if applicable) has considered the limits in Sections 15.107 and 15.207 adopted under FCC 02-157 (ETDocket 98-80). The product may be marketed after July 11, 2005, and is not affected by the 15.37(j) transition provisions.

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## Test Location

Units G02, 305, 605, Roof , 31 Lok Yip Road, On Lok Tsuen, Fanling, N.T., Hong Kong

## Summary of Test Results

### Interference Radiation:

Test result: O.K.  
Test data: See attached data sheet

### Interference Voltage:

Test result: O.K.  
Test data: See attached data sheet

### PHOTOGRAPH OF THE SAMPLE



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## TEST EQUIPMENT LIST

Equipment	Manufacturer	Model	Serial No.	Remark
Test Receiver	Rohde & Schwarz	ESH 3	863497/015	150KHz – 30MHz
Test Receiver	Rohde & Schwarz	ESH 3	892580/006	9KHz – 30MHz
Test Receiver	Rohde & Schwarz	ESVP	860688/022	25MHz – 1,000 MHz
Test Receiver	Rohde & Schwarz	ESVP	863512/012	25MHz – 1,000 MHz
Test Receiver	Rohde & Schwarz	ESHS30	839667/002	9KHz – 30MHz
Test Receiver	Rohde & Schwarz	ESVS30	828525/006	25MHz – 1000MHz
Spectrum Analyzer with Q. Peak	Advantest	R3132	140101852	9KHz – 3GHz
Spectrum Analyzer with Q. Peak	Tektronix	2712	B023006	0.15MHz – 1000MHz
Interface for Spectrum 2712	Tektronix	TD3F14A	--	--
Impulse Limiter	Rohde & Schwarz	ESH-3-Z2	--	--
Artificial Mains Network (LISN)	Schwarzbeck	NSLK 8127	8127312	2 x 10A, 50Ω, 50μH 9KHz-30MHz
Artificial Mains Network (LISN)	Schwarzbeck	NSLK 8127	8127309	2 x 10A, 50Ω, 50μH 9KHz-30MHz
Antenna System	Schwarzbeck	BBA 9106 / UHALP 9107	--	30MHz – 1000MHz
Antenna Mast System	Schwarzbeck	AM9104	--	Max. 4 meters height
Loop Antenna	Rohde & Schwarz	HFH2-Z2	871336/48	9KHz-30MHz
Turntable with Controller	Drehtisch	DT312	--	φ120 cm

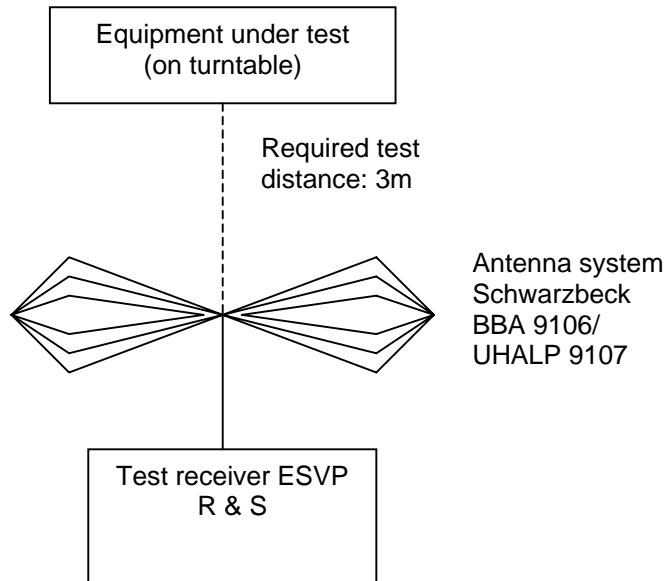
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## Radiated Emission Testprocedure (> 30MHz)



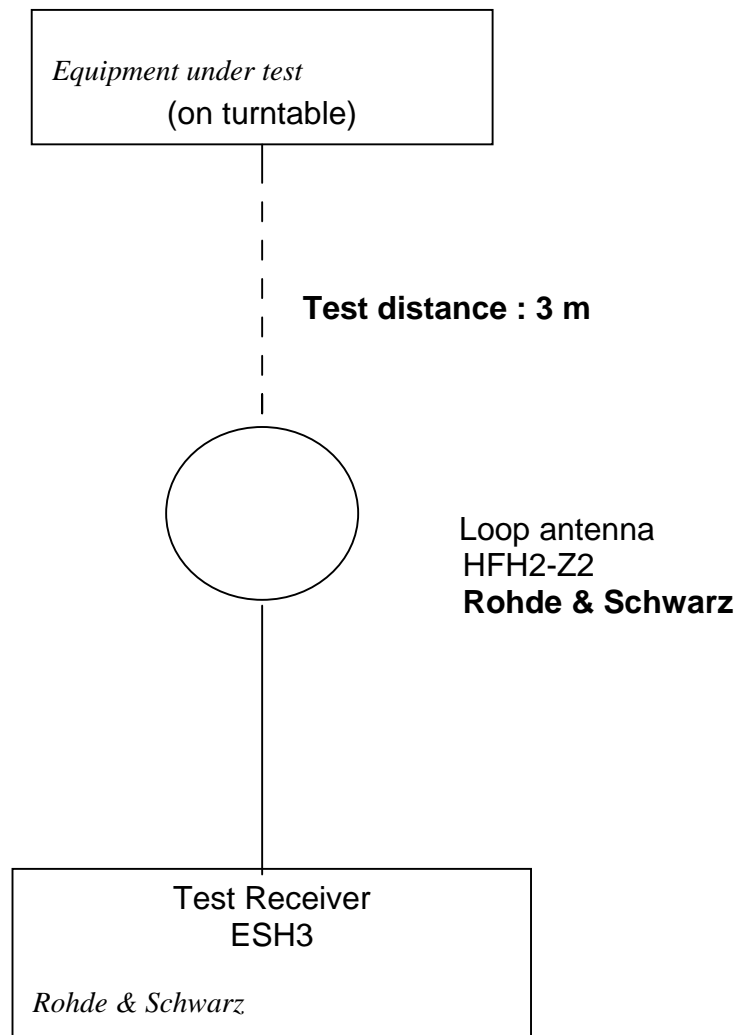
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## Radiated Emission Test Procedure ( 9kHz – 30MHz)



# U1

Interference Radiation  
Acc : FCC Part 15 Subpart B (15.109)

Date : 2005-12-14  
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IECC Ref: 43329  
Model: CRD840WN  
Applicant: LASCO INDUSTRIES LIMITED  
Ser.Nr.: --  
Oper. Mode: FM Mode  
InterFreq: 10.7 MHz

Test Equipment  
Receiver: ESVP Rohde & Schwarz  
Antenna: Schwarzbeck BBA 9106  
and UHALP 9107

Receiving - frequency (MHz)	Oscillator-frequency (MHz)	Harmonics	Reading dBµV	Polarization	Correction - factor (dB)	Testresult dBµV/m	Limit dB(µV/m)
89.8	100.5	1	20	H	10.4	30.4	43.5
	201.0	2	18	H	16.5	34.5	43.5
	301.5	3	< 16	H	16.3	< 32.3	46.0
	402.0	4	< 16	H	18.3	< 34.3	46.0
	502.5	5	< 16	H	19.7	< 35.7	46.0
	603.0	6	< 16	H	20.9	< 36.9	46.0
	703.5	7	< 16	H	22.4	< 38.4	46.0
	804.0	8	< 16	H	23.8	< 39.8	46.0
98.3	904.5	9	< 16	H	25.1	< 41.1	46.0
	109.0	1	20	H	11.7	31.7	43.5
	218.0	2	18	H	17.0	35.0	46.0
	327.0	3	< 16	H	16.8	< 32.8	46.0
	436.0	4	< 16	H	18.8	< 34.8	46.0
	545.0	5	< 16	H	20.2	< 36.2	46.0
	654.0	6	< 16	H	21.7	< 37.7	46.0
	763.0	7	< 16	H	23.2	< 39.2	46.0
108.0	872.0	8	< 16	H	24.7	< 40.7	46.0
	981.0	9	< 16	H	26.2	< 42.2	54.0
	118.7	1	20	H	12.7	32.7	43.5
	237.4	2	18	H	17.4	35.4	46.0
	356.1	3	< 16	H	17.5	< 33.5	46.0
	474.8	4	< 16	H	19.4	< 35.4	46.0
	593.5	5	< 16	H	20.8	< 36.8	46.0
	712.2	6	< 16	H	22.6	< 38.6	46.0
	830.9	7	< 16	H	24.1	< 40.1	46.0
	949.6	8	< 16	H	25.8	< 41.8	46.0

The measurements indicate that the test unit meets the FCC requirements.

# U1

Interference Radiation  
Acc : FCC Part 15 Subpart B (15.109)

Date : 2005-12-14  
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IECC Ref: 43329  
Model: CRD840WN  
Applicant: LASCO INDUSTRIES LIMITED  
Ser.Nr.: --  
Oper. Mode: FM Mode  
InterFreq: 10.7 MHz

Test Equipment  
Receiver: ESVP Rohde & Schwarz  
Antenna: Schwarzbeck BBA 9106  
and UHALP 9107

Receiving - frequency (MHz)	Oscillator-frequency (MHz)	Harmonics	Reading dBμV	Polarization	Correction - factor (dB)	Testresult dBμV/m	Limit dB(μV/m)
89.8	100.5	1	20	V	10.4	30.4	43.5
	201.0	2	18	V	16.5	34.5	43.5
	301.5	3	< 16	V	16.3	< 32.3	46.0
	402.0	4	< 16	V	18.3	< 34.3	46.0
	502.5	5	< 16	V	19.7	< 35.7	46.0
	603.0	6	< 16	V	20.9	< 36.9	46.0
	703.5	7	< 16	V	22.4	< 38.4	46.0
	804.0	8	< 16	V	23.8	< 39.8	46.0
	904.5	9	< 16	V	25.1	< 41.1	46.0
98.3	109.0	1	20	V	11.7	31.7	43.5
	218.0	2	18	V	17.0	35.0	46.0
	327.0	3	< 16	V	16.8	< 32.8	46.0
	436.0	4	< 16	V	18.8	< 34.8	46.0
	545.0	5	< 16	V	20.2	< 36.2	46.0
	654.0	6	< 16	V	21.7	< 37.7	46.0
	763.0	7	< 16	V	23.2	< 39.2	46.0
	872.0	8	< 16	V	24.7	< 40.7	46.0
	981.0	9	< 16	V	26.2	< 42.2	54.0
108.0	118.7	1	20	V	12.7	32.7	43.5
	237.4	2	18	V	17.4	35.4	46.0
	356.1	3	< 16	V	17.5	< 33.5	46.0
	474.8	4	< 16	V	19.4	< 35.4	46.0
	593.5	5	< 16	V	20.8	< 36.8	46.0
	712.2	6	< 16	V	22.6	< 38.6	46.0
	830.9	7	< 16	V	24.1	< 40.1	46.0
	949.6	8	< 16	V	25.8	< 41.8	46.0

The measurements indicate that the test unit meets the FCC requirements.

# IT 5/6

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Interference Radiation  
Acc : FCC Part 15 Subpart B (15.109)

<b>IECC Ref:</b>	43329	
<b>Model:</b>	CRD840WN	Test Equipment
<b>Applicant:</b>	LASCO INDUSTRIES LIMITED	Receiver: ESVP Rohde & Schwarz
		Antenna: Schwarzbeck BBA 9106
<b>Ser.Nr.:</b>	--	and UHALP 9107
<b>Set under test:</b>	AM/FM CD Clock Radio with Weather Band	
<b>Connected sets:</b>	-	
<b>Operating mode:</b>	CDRW Play mode	

Frequency (MHz)	Horz. Reading dB(μV)	Vert. Reading dB(μV)	Antenna Factor (dB)	Horiz. Test Result dB(μV/m)	Vert. Test Result dB(μV/m)	Limit dB(μV/m)
30	< 16	< 16	18.4	< 34.4	< 34.4	40.0
33.9	< 16	< 16	16.8	< 32.8	< 32.8	40.0
50.8	< 16	< 16	11.4	< 27.4	< 27.4	40.0
67.7	< 16	< 16	6.7	< 22.7	< 22.7	40.0
84.9	< 16	21	7.8	< 23.8	28.8	40.0
101.6	< 16	< 16	10.5	< 26.5	< 26.5	43.5
118.5	< 16	< 16	12.7	< 28.7	< 28.7	43.5
200	< 16	< 16	16.5	< 32.5	< 32.5	43.5
500	< 16	< 16	19.7	< 35.7	< 35.7	46.0
1000	< 16	< 16	26.5	< 42.5	< 42.5	54.0

The measurements indicate that the test unit meets the FCC requirements.

# U1

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Interference Radiation

Acc : FCC Part 15 Subpart B (15.109)

IECC Ref: 43329  
 Model: CRD840WN  
 Applicant: LASCO INDUSTRIES LIMITED  
 Ser.Nr.: --  
 Oper. Mode: Weather Band  
 InterFreq: 10.7 MHz

Test Equipment  
 Receiver: ESVP Rohde & Schwarz  
 Antenna: Schwarzbeck BBA 9106  
 and UHALP 9107

Receiving - frequency (MHz)	Oscillator-frequency (MHz)	Harmonics	Reading dBμV	Polarization	Correction - factor (dB)	Testresult dBμV/m	Limit dB(μV/m)
162.4	173.1	1	23	H	15.9	38.9	43.5
	346.2	2	20	H	17.3	37.3	46.0
	519.3	3	18	H	19.9	37.9	46.0
	692.4	4	< 16	H	22.3	< 38.3	46.0
	865.5	5	< 16	H	24.6	< 40.6	46.0
162.475	173.2	1	23	H	15.9	38.9	43.5
	346.4	2	20	H	17.3	37.3	46.0
	519.5	3	18	H	19.9	37.9	46.0
	692.7	4	< 16	H	22.3	< 38.3	46.0
	865.9	5	< 16	H	24.6	< 40.6	46.0
162.55	173.3	1	23	H	15.9	38.9	43.5
	346.5	2	20	H	17.3	37.3	46.0
	519.8	3	18	H	19.9	37.9	46.0
	693.0	4	< 16	H	22.3	< 38.3	46.0
	866.3	5	< 16	H	24.6	< 40.6	46.0

The measurements indicate that the test unit meets the FCC requirements

# U1

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Interference Radiation

According: FCC Part 15 Subpart B (15.109)

IECC Ref: 43329  
 Model: CRD840WN  
 Applicant: LASCO INDUSTRIES LIMITED  
 Ser.Nr.: --  
 Oper. Mode: Weather Band  
 InterFreq: 10.7 MHz

Test Equipment

Receiver: ESVP Rohde & Schwarz

Antenna: Schwarzbeck BBA 9106  
 and UHALP 9107

Receiving - frequency (MHz)	Oscillator-frequency (MHz)	Harmonics	Reading dBμV	Polarization	Correction - factor (dB)	Testresult dBμV/m	Limit dB(μV/m)
162.4	173.1	1	20	V	15.9	35.9	43.5
	346.2	2	18	V	17.3	35.3	46.0
	519.3	3	< 16	V	19.9	< 35.9	46.0
	692.4	4	< 16	V	22.3	< 38.3	46.0
	865.5	5	< 16	V	24.6	< 40.6	46.0
162.475	173.2	1	20	V	15.9	35.9	43.5
	346.4	2	18	V	17.3	35.3	46.0
	519.5	3	< 16	V	19.9	< 35.9	46.0
	692.7	4	< 16	V	22.3	< 38.3	46.0
	865.9	5	< 16	V	24.6	< 40.6	46.0
162.55	173.3	1	20	V	15.9	35.9	43.5
	346.5	2	18	V	17.3	35.3	46.0
	519.8	3	< 16	V	19.9	< 35.9	46.0
	693.0	4	< 16	V	22.3	< 38.3	46.0
	866.3	5	< 16	V	24.6	< 40.6	46.0

The measurements indicate that the test unit meets the FCC requirements

## **Notes for Radiation Measurement**

**1. Measurement facility:**

Measurement facility located at Fanling (Hong Kong), placed on file with the FCC Pursuant to Section 2.948 of the FCC Rules.

**2. Distance between the EUT and measuring antenna:**

3 meters.

**3. Measuring instrumentations:**

Rohde & Schwarz ESVP Test Receiver ( 20 - 1300 MHz ) with a CISPR weighting QP detector, 6 dB bandwidth set at 120 KHz.

**4. Measuring antenna:**

Broad-band antenna for the frequency range 30 - 300 MHz and frequency range 300 - 1000 MHz, connected with 10 meters coaxial cable. Cable loss of the coaxial cable included in the Antenna Factor for measurement data. The antennas are capable of measuring both horizontal and vertical polarizations.

Loop antenna for the frequency range 9KHz – 30MHz, connected with 10 meters coaxial cable. Cable loss of the coaxial cable included in the measurement data. The center of the loop 1. m above the ground plane, positioned with its plane vertical at the specified distance and rotated about its vertical axis and placed horizontal for maximum response at each azimuth about the EUT.

**5. Frequency range scanned:**

The frequency range 30 - 1000 MHz has been scanned. Readings of the highest emissions relating to the limit were reported as above.

**6. Arrangement of EUT:**

During the test, the sample was operated at rated supply voltage and arranged for maximum emissions. To find the maximum emission (30MHz – 1000MHz), the antenna was raised from 1 to 4 meters and was stopped at the maximum emission point.

**7. Measuring Procedure:**

In **accordance** with the relevant sections of the American National Standards Institute (ANSI) C63.4-2003 'Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9KHz to 40GHz'.

# U 5/6

Interf. Voltage 150 KHz - 30 MHz  
Acc: FCC Part 15 Subpart B (15.107)

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IECC Ref: 43329  
Model: CRD840WN  
Applicant: LASCO INDUSTRIES LIMITED  
Ser.Nr.: --  
Set under test: AM/FM CD Clock Radio with Weather Band  
Connected sets: -  
Operating mode: FM Mode

Test Equipment  
Receiver: Rohde & Schwarz ESH 3  
Schwarzbeck NNLA 8119

Frequency (MHz)	Test Result (Quasi-Peak) dB(μV)	Test Result (Average) dB(μV)	Limit (Quasi-Peak) dB(μV)	Limit (Average) dB(μV)
0.15	< 25	< 25	66	56
0.24	< 25	< 25	62	52
0.5	< 25	< 25	56	46
1	< 25	< 25	56	46
1.4	< 25	< 25	56	46
2	< 25	< 25	56	46
5	< 25	< 25	56	46
10	< 25	< 25	60	50
16	< 25	< 25	60	50
22	< 25	< 25	60	50
26	< 25	< 25	60	50
30	< 25	< 25	60	50

The measurements indicate that the test unit meets the FCC requirements

# U 5/6

Interf. Voltage 150 KHz - 30 MHz  
Acc: FCC Part 15 Subpart B (15.107)

Date : 2005-12-14  
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IECC Ref: 43329  
Model: CRD840WN  
Applicant: LASCO INDUSTRIES LIMITED  
Ser.Nr.: --  
Set under test: AM/FM CD Clock Radio with Weather Band  
Connected sets: -  
Operating mode: CDRW Mode

Test Equipment  
Receiver: Rohde & Schwarz ESH 3  
Schwarzbeck NNLA 8119

Frequency (MHz)	Test Result (Quasi-Peak) dB(µV)	Test Result (Average) dB(µV)	Limit (Quasi-Peak) dB(µV)	Limit (Average) dB(µV)
0.15	< 25	< 25	66	56
0.24	< 25	< 25	62	52
0.5	< 25	< 25	56	46
1	< 25	< 25	56	46
1.4	< 25	< 25	56	46
2	< 25	< 25	56	46
5	< 25	< 25	56	46
10	< 25	< 25	60	50
16	< 25	< 25	60	50
22	< 25	< 25	60	50
26	< 25	< 25	60	50
30	< 25	< 25	60	50

The measurements indicate that the test unit meets the FCC requirements

# U 5/6

Interf. Voltage 150 KHz - 30 MHz  
Acc: FCC Part 15 Subpart B (15.107)

Date : 2005-12-14  
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**IECC Ref:** 43329  
**Model:** CRD840WN  
**Applicant:** LASCO INDUSTRIES LIMITED  
**Ser.Nr.:** --  
**Set under test:** AM/FM CD Clock Radio with Weather Band  
**Connected sets:** -  
**Operating mode:** Weather Band

Test Equipment  
Receiver: Rohde & Schwarz ESH 3  
Schwarzbeck NNLA 8119

Frequency (MHz)	Test Result (Quasi-Peak) dB(μV)	Test Result (Average) dB(μV)	Limit (Quasi-Peak) dB(μV)	Limit (Average) dB(μV)
0.15	< 25	< 25	66	56
0.24	< 25	< 25	62	52
0.5	< 25	< 25	56	46
1	< 25	< 25	56	46
1.4	< 25	< 25	56	46
2	< 25	< 25	56	46
5	< 25	< 25	56	46
10	< 25	< 25	60	50
16	< 25	< 25	60	50
22	< 25	< 25	60	50
26	< 25	< 25	60	50
30	< 25	< 25	60	50

The measurements indicate that the test unit meets the FCC requirements

## Notes for Voltage Measurement

**1. LISN (Line Impedance Stabilization Network) used:**

LISN in accordance with CISPR 16-1.

**2. Measuring instrumentations:**

Rohde & Schwarz ESH3 Test Receiver ( 9 KHz - 30 MHz ) with a CISPR weighting QP detector, 6 dB bandwidth set at 10 KHz.

**3. Frequency range scanned:**

The frequency range 150 KHz - 30 MHz has been scanned. Readings of the highest emissions relating to the limit were reported as above.

**4. Setup of EUT:**

Connection of equipment and operation conditions are the same as those in the Radiation measurement.

**5. Measuring Procedure:**

In accordance with the relevant sections of the American National Standards Institute (ANSI) C63.4-2003 'Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9KHz to 40GHz'